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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/575,367

04/11/2006

Henri Rosset

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38834 7590 11/10/2008  
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EXAMINER

GRABOWSKI, KYLE ROBERT

ART UNIT

PAPER NUMBER

3725

MAIL DATE

DELIVERY MODE

11/10/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/575,367	<b>Applicant(s)</b> ROSSET, HENRI	
	<b>Examiner</b> Kyle Grabowski	<b>Art Unit</b> 3725	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 17 July 2008.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07/17/08 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Claim Objections***

1. Claims 1, 4, 6, and 8, are objected to because of the following informalities:  
Claim 1 recites that the first ply includes at least one first authentication element and later recites "the first authentication element" which lack proper antecedent basis; claims 6 and 8 also recite "said first authentication element" which lacks proper antecedent basis for the reasons stated above. Claim 4 recites a "said second authentication element of said first ply" which lacks proper antecedent basis in claim 1 from which it depends. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.

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2. Ascertaining the differences between the prior art and the claims at issue.
  3. Resolving the level of ordinary skill in the pertinent art.
  4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
4. Claims 1-10, 12-21, are rejected under 35 U.S.C. 103(a) as being unpatentable over Murakami et al. (US 5,961,432) in view of Murakami et al. (US 5,565,276).
5. In respect to claims 1-3, 9-10, and 19-20, Murakami et al. ('432) disclose a security paper comprising two material paper layers: first ply 3 and second ply 4 which are both external; the first ply 3 includes a first authentication element, watermarks 2, which are absent from the second ply 4; the first authentication element watermarks 2 are formed in the reduced thickness portions, "windows", which have a non-zero thickness (as is known in the watermarking art -- wherein variations in paper thickness cause optical effects) (Col. 2, 50-62). Murakami et al. ('432) do not disclose the second ply 4 comprising a reinforcing element absent from the first ply, and a second authentication element.
6. Murakami et al. ('276) disclose an anti-falsification paper 1 comprising thin nacreous (iridescent) pigment fragments 2 that are buried during the paper making process (Fig. 2). The base paper 1 can be comprised of cotton (Col 4, Ln 48) and further, reinforced with a "paper strength agent such as polyacrylamide" (Col. 4, Lns 49-50), a polyamide. The nacreous pigments "exhibit a rainbow color and their hue changes depending on an angle of view" (Col. 3, Lns 62-63) providing an authentication element. The nacreous pigments are held to the paper by a binder, preferably polyvinyl alcohol (PVA) which has "a suitable physical strength" (Col. 3, Lns 21-22); the binder

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also acts as a reinforcing element thereby incorporating an authentication function into the reinforcement.

7. Murakami et al. ('276) further disclose that the "blending amount of the polyolefin synthetic pulp is preferably 2 to 30 parts by weight to 98 to 70 parts by weight of paper-making pulp" (Col. 4, Lns 61-63). This range ( 2% to 30% polyolefin) includes the limitation of between 10 and 20 parts polyethylene to 100 parts other fibers (9.1% to 17.7% polyethylene). Murakami et al. don't specifically disclose polyethylene, however polyethylene is a well know polyolefin (see PIPA attached) and therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to select polyethylene as a suitable polyolefin because material selection is held to be within one of ordinary skill in the art.

8. It would have been obvious to one of ordinary skill in the art at the time the invention was made to substitute the second ply 4 of the security paper composite taught in Murakami et al. ('432) with anti-falsification paper stock in view of Murakami et al. ('276) to provide further security measures to the multi-layer composite. Murakami et al. ('276) states that the "anti-falsification paper according to the present invention can be used in combination with other anti-falsification means, such as *watermarking*, mixing with dyed fibers, *including of security threads*, and so forth" [emphasis added] (Col. 7, Lns 10-13).

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9. In respect to claims 4, 5, and 21, Murakami et al. ('432) further disclose that the first ply 3 includes watermarks 2 formed therein as authentication elements which can be detected optically (Fig. 2).

10. In respect to claims 6, 7, and 17, Murakami et al. ('432) further disclose a security thread 5 which is an additional authentication element (which for the purposes of claim 1 may also be referred to as a first authentication element --of the at least one authentication elements-- of first ply 4); the security thread 5 may be a magnetic thread (Col 5, Ln 39) which would react to a electromagnetic field (especially a strong one created by microwaves), or alternately a fluorescent thread (Col 5, Ln 40) which would react to a stimulation of x-rays by displaying visual light observable to the naked eye.

11. In respect to claims 8 and 18, Murakami et al. ('432) further disclose that the "combination ratio between the outermost paper layer [first ply 3] and the inner paper layer [second ply 4] is preferably set in a range of between 20:80 and 80:20" (Col 5, Lns 64-66); in the instance of combination ratio 65:35 the first ply is approximately 1.86 times greater in weight. Although Murakami et al. ('432) does not specifically disclose a thickness ratio, because both plies are substantially flat and of the same material, an adjustment of their weight ratio very strongly correlates with their thickness ratio and therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the first ply with a greater thickness (or more specifically

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1.5 to 2.0 times greater thickness) than the second ply to define a suitable range where the watermarks can be clearly defined (Col. 6, Lns 3-6).

12. In respect to claims 12 and 14, Murakami et al. ('432) further disclose that the security paper layers 3 and 4 may be comprised of cotton fibers (Col 4, Ln 21) and ultimately utilized as banknote paper (Col. 7, Ln 43).

13. In respect to claim 13 and 22, the paper stock ('276) in Figure 5 features two paper layers 10 and 20, with the reinforced fibers in layer 10; It also would have been obvious to one of ordinary skill in the art at the time the invention was made to substitute the second ply 3 of the security paper composite taught in Murakami et al. ('432) with anti-falsification two-layer paper stock (Fig. 5) in view of Murakami et al. ('276, Fig 5) to provide further security measures to the multi-layer (three layer) composite (the same motivation as described above).

14. In respect to claims 15 and 16, Murakami et al. ('432) further disclose: a cylinder paper machine 11a with molds 13 (Fig. 4), a watermark wire 12b (Fig. 5), and that the "second layer overlying the first layer to form a two-layer combined sheet" together comprising a "wet web" (Col. 6, Lns 56-64).

15. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Murakami et al. (US 5,961,432) in view of Murakami et al. (US 5,565,276) as applied to

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claim 1 above, and further in view of Nordic Pulp and Paper Research. Murakami ('432) as modified by Murakami ('276) does not disclose the tear strengths of any of the fibrous paper plies, however a tear index of  $10 \text{ mNm}^2/\text{g}$  is dependent upon the material one selects from Murakami et al. ('276) as the second ply. Nordic Pulp and Paper show that a pulp such as pine kraft have a tear index above  $10 \text{ mNm}^2/\text{g}$  for all brands listed. It would have been obvious to one of ordinary skill in the art at the time the invention was made to select a pine kraft pulp to insure that the tear index was higher than  $10 \text{ mNm}^2/\text{g}$ .

### ***Response to Arguments***

16. Applicant's arguments filed on 07/17/08 have been fully considered but they are not persuasive. In an attempt to overcome the prior art of record, the applicant's representative added the limitation that the first and second authentication elements are provided in regions of non-zero thickness, however the examiner regrets any confusion presented in the non-final office action regarding the plies.

17. The applicant's representative contends that "the material ply 3 is simply provided as a window, i.e., an opening that make the watermark and indicia of the ply 4 visible from the viewing side of ply 3" however this is incorrect. Although the ply 3 is provided as a window (in regards to its transparency) it is not simply an opening and therefore also non-zero in thickness. Murakami et al. explicitly states that the watermarks are *formed in* the window portions which are created by a *reduced*



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*thickness* in the paper (Abstract & Col. 2, 50-62). This disclosure corroborates with known water marking techniques in which: a marking in paper resulting from *differences in thickness* usually produced by pressure of a projecting design in the mold or on a processing roll and visible when the paper is held up to the light (Merriam-Webster Dictionary) [emphasis added]. As such, the amended claim 1 does patently distinguish the present application from the cited prior art.

18. The applicant also contends that claim 13 is not included in either the header or body of the rejections. The examiner apologizes excluding claims 13 in the header of the rejections as a typographical error – “claims 1-3, 9, 10” should read “claims 1-3, 9, 10, and 13”; claim 13 was rejected on its merits, however in the non-final action (see pg. 4, para 3) wherein the embodiment of Figure 5 in Murakami et al. ('276) includes an two-layer structure in which substitution into Murakami et al. ('432) would yield a three layer structure. As such, claim 22 is rejected for the same reasons as claim 13.

### ***Conclusion***

19. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within

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TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kyle Grabowski whose telephone number is (571)270-3518. The examiner can normally be reached on Monday-Thursday, every other Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dana Ross can be reached on (571)272-4480. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Kyle Grabowski/  
Examiner, Art Unit 3725

/Dana Ross/  
Supervisory Patent Examiner, Art  
Unit 3725